STUDY PROGRAMME	ACADEMIC YEAR	SEMESTER
ECO + ECO-EPPA + EEIB + ECO-ELEA	2023 - 2024	1

COURSE TITLE

ADVANCED APPLIED ECONOMETRICS

COURSE PROFESSOR	COURSE ASSISTANT
PETER CLAEYS	UYANGA LKHAGVAJAV

NATURE OF COURSE (COMPULSORY, OPTIONAL)	LANGUAGE OF INSTRUCTION
COMPULSORY	ENGLISH

ECTS CREDITS

4.5

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1. **COURSE OBJECTIVE**

The course aims to equip students with a set of the most advanced macro- or micro-econometric techniques so they can: (a) understand, analyse and evaluate scientific articles using econometric tools; (b) apply econometric techniques to real-world economic problems and report on the outcomes. The advanced econometric techniques include the most recent developments in extending basic econometric tools in the fields of time series analysis, panel data and instrumental variables, with a focus on the econometric practice and the crucial role of identification.

2. **LEARNING OUTCOMES**

On completion of this course, students should be able to:

a. interpret econometric results of scientific articles;
b. critically evaluate the results of scientific articles that employ econometric tools to understand the validity of the identification technique;
c. understand and apprehend the shortcomings of different econometric tools in different circumstances;
d. point out the shortcomings of different econometric tools;
e. link the econometric tools to economic problems;
f. propose the most appropriate techniques to analyse different economic problems.

The learning outcomes for this course tie in with the following learning outcomes for the European Economic Studies programme:

CONNECT LIFE & LEARNING.

a. describe, explain and illustrate core economic theory and selected policies related to economic integration;

b. use economic theory to assess current problems and policies;

c. think innovatively and provide constructive analytical commentary as well as potential recommendations on the evolution of the EU and its possible future development;

d. recognise the importance of empirical foundation for knowledge acquisition and evidence-based policies and use quantitative techniques and other empirical methods to evaluate theoretical knowledge;

e. be autonomous in their preparation and review of materials for the courses as well as in their completion of assignments bearing different requirements in terms of methodology, workload and evaluation of the final work;

f. demonstrate knowledge of the European Union' institutions, competences and substantive principles;

g. recognise, analyse, explain and critique economic developments and economic policies in Europe;

h. acquire a strong knowledge of broader social and political conditions and developments in Europe.

3. COURSE CONTENTS

a. From economics to econometrics: identification
b. Endogeneity: IV and GMM
c. Panel data
d. Uni- and multivariate time series models
e. Forecasting techniques

If time permits, probit/tobit models, count models, and duration models will be discussed.

4. TEACHING METHOD(S)

Lectures with class participation. Classwa are mostly a theoretical session, but are followed by a practical seminar, which is an in-class discussion analysing a specific real-world economic problem prepared prior to the lecture. This will require prior preparation by a group of students. There is also a final bootcamp with one task, in preparation for the exam.

5. COURSE MATERIAL

The main handbook for this course is 'A Guide to Modern Econometrics' by Marno Verbeek (ISBN: 978-1-119-40115-5, 5th edition, 2017).

Lecture notes are available through the course web page.

Some additional readings for the tasks, as well as the datasets, will be made available through the course web page.

6. EVALUATION

The evaluation will be based on
   a. The 2 practical seminar work (10%).
   b. Bootcamp: an in-class seminar exercise, on a specific case-study, and will be a complete report on a specific economic problem (30%)
   c. Exam
      a. a closed-book written exam, one hour in length, which will take place during the Nov.-Dec. first examination session. The closed-book exam will consist of two economic case-studies for which you will propose an outline of the econometric analysis. All questions will carry the same weight (30%).
      b. An econometric assignment on the computer, two hours in length, which will take place during the Nov.-Dec. first examination session. The assignment will be a complete report on a specific economic problem (30%).

Rules concerning the second examination session are laid out in the Study Rules. For students who have to do the resit exam in September/October, the exam accounts for 100% of the grade.